

REMARKS

This is in response to the Official Action currently outstanding in the above-identified application, which Official Action the Examiner has designated to be a FINAL Official Action.

Claims 3-5, 7, and 18-20 were presented for consideration in the last Amendment filed in the above-identified application. Claims 3-5, 7 and 18-20 stand FINALLY rejected in the currently outstanding Official Action. By the foregoing Amendment, Applicants propose a further direct amendment of Claim 18, thereby indirectly amending Claims 3-5, 7 and 19-20 which are dependent upon Claim 18. A **"VERSION SHOWING THE CHANGES MADE TO THE CLAIMS"** is attached as required by the Rules. Accordingly, in the event that the foregoing Amendment is granted entry by the Examiner, Claims 3-5, 7 and 18-20 as hereinabove amended will constitute the claims under active prosecution in this application.

In the currently outstanding Official Action, the Examiner has rejected Claims 3-5, 7 and 18-20 under 35 USC 103(a) as being unpatentable over the newly cited Kim et al (US Patent No. 5,933,208) reference, in view of the previously cited Shirahashi et al (US Patent No. 5,285,301), Sato et al (US Patent No. 6,081,305) and Miyawaki et al (US Patent No. 5,822,028) references. More particularly, the Examiner has argued that the Kim et al reference discloses a first insulating substrate with picture element electrodes in a matrix, a second opposite substrate with a counter electrode having portions above each pixel (picture?) electrode, aligned and sealed with liquid crystal interposing, with the first substrate having switching elements, line driving means, color filters and light shielding layers corresponding to the transistors (picture electrodes?). **The Examiner specifically admits that the Kim et al reference does not clearly teach a light shielding frame layer disposed around the periphery of the picture element electrode matrix disclosed therein.**

Nevertheless, the Examiner argues that the use of a black matrix (light-shielding frame layer?) around the perimeter (presumably of a picture element electrode matrix) was notoriously well known in the art for preventing light leakage and shielding drive circuits and therefore would have been obvious to one skilled in the art at the time the present invention was made. The Examiner then alludes to the secondary references cited as support for his assertion of the well-known status of light shielding frame layers in the art despite Applicants' detailed discussion of the fact that those secondary references fail to appropriately support the Examiner's alleged *prima facie* case of obviousness in their Amendment of 28 November 2001.

Further, in response to the latter Amendment, the Examiner notes that the so-called "black matrix" of light shielding material located between the picture electrodes in the Kim et al reference is disposed on the first substrate thereof. Accordingly, the Examiner concludes that the presence of one light absorbing layer on the first substrate would suggest to one skilled in the art as of the time that the present invention was made that the same layer should be used at any other locations at which a light absorbing layer was desired. In support of this point, the Examiner argues that one skilled in the art would not utilize a separate light absorbing layer for the provision of light absorption at different desired locations in the disclosed device.

Based upon the foregoing argument and the cited references, the Examiner FINALLY rejects all of the claims pending in this application as being obvious within the terms of 35 USC 103(a).

Applicants respectfully submit that the Examiner has lost sight of the essential features of the present invention in the course of his rejections. In particular, it is to be noted that the present invention is an easy-to-manufacture color liquid crystal display device wherein:

1. **all** of the TFT's, the plurality of color filters and the light shielding frame layer are formed on **the same** substrate, thereby facilitating the manufacture of the device;

2. the light shielding frame layer is disposed close to the most-outside ones of the picture element electrodes around a periphery of the display area formed by those picture electrodes (note that it is herein proposed to amend Claim 18 to specifically set forth this inherently present feature), and the light shielding layers are formed by the same material as that forming the light shielding frame layer for shielding light inputted on the upper portion of an active element conductively connected to the picture element electrodes (note, this provides a light shielding frame layer that does not generate light discharge without adding any new steps to the manufacturing of the device); and

3. the light shielding layers and the light shielding frame layer are formed of the same materials thereby avoiding the necessity of a separate layer formation, and the opposing substrates are formed with opposed electrodes and aligning films that correspond to the display region, but not the light shielding frame layer, thereby avoiding any necessity for special techniques for the attachment of the substrates one to the other with fine precision.

The Kim et al reference clearly fails to teach, disclose or suggest a light shielding frame layer as herein claimed. Indeed, as mentioned above, the Examiner has admitted this point.

Further, it is clear for reasons that are specifically and in detail already of record in this prosecution that the secondary references **fail** to teach, disclose or suggest the formation of a light shielding layer on the first substrate, much less the formation of that layer close to the most-outside ones of the picture element electrodes around the periphery of the display region as now specifically claimed.

Accordingly, the teaching, disclosure or suggestion of this invention relied upon by the Examiner arises either from the present disclosure (in which case it constitutes improper hindsight reasoning) or from the application of an "obvious to try" standard (which also is improper). Hence, it is perhaps key to recognize that while there may be assemblies in the art wherein a picture element region is in broad terms "surrounded by" a light shielding layer, the art has not heretofore recognized the benefits of the disposition of light shielding material forming a light shielding frame layer on the first substrate and at the particular location herein claimed. Therefore, while in hindsight in view of the Applicants' disclosure it may be abundantly clear that these benefits will follow from the particular relationship of elements claimed, that particular arrangement of elements is not taught, disclosed or suggested within the four corners of the art herein cited.

Similarly, it is easy to reason that since Kim et al shows a light shielding layer filling the gaps between the picture electrodes on the first substrate that those skilled in the art would use the same layer for light shielding functions at other desired locations on the first substrate and that they would attempt to avoid the creation of separate other light shielding layers if possible. However, the latter line of reasoning begs the question. Specifically, there is no teaching, disclosure or suggestion in the art that directs where the other locations of a light shielding layer on the first substrate should be desired. This is the case even assuming that a light shielding frame is desired because the art of record teaches that that light shielding frame layer should be disposed on the second substrate rather than the first substrate thereby requiring either very precise alignment of the substrates during assembly or the provision of substantial tolerances in the dimensions of the light shielding frame layer relative to the peripheral size of the display region. The positioning of a light shielding frame layer on the first layer, therefore, becomes a matter of trial and error (an application of an improper "obvious to try" standard).

For each, and all, of the foregoing reasons, Applicants believe that the Examiner's currently outstanding FINAL rejections are in error; and that Claims 3-5, 7, 18, 19 and 20 of this application, as they will stand upon the entry of the foregoing Amendment, are in condition for allowance, or at least in better condition for appeal. Reconsideration, entry of the foregoing Amendment, and allowance of this application, therefore, are respectfully requested.

Applicants also believe that additional fees beyond those submitted herewith are not required in connection with the consideration of this response to the currently outstanding Official Action. However, if for any reason a fee is required, a fee paid is inadequate or credit is owed for any excess fee paid, you are hereby authorized and requested to charge and/or credit Deposit Account No. **04-1105**, as necessary, for the correct payment of all fees which may be due in connection with the filing and consideration of this communication.

Respectfully submitted,

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VERSION SHOWING CHANGES MADE TO THE CLAIMS

Additions shown underlined; Deletions shown in brackets.

IN THE CLAIMS:

Please further amend Claim 18 as follows:

18. (Twice Amended) An easy-to-manufacture color liquid crystal display device, said device comprising:
- a first insulative substrate on which picture element electrodes are aligned in a matrix configuration defining an image display region; and
 - a second insulative substrate on which a counter electrode is disposed; wherein said first insulative substrate and said second insulative substrate are adhered to each other with a liquid crystal material interposed therebetween such that each said picture element electrode faces at least a portion of said counter electrode; and
 - wherein said first insulative substrate further includes thereon a plurality of switching elements connected respectively to said picture elements, line means for supplying signals to said switching elements, a plurality of color filters arranged to correspond to the picture element electrodes in said display region, a light shielding frame layer disposed close to the most-outside ones of the picture element electrodes around a periphery of said display region, and light shielding layers corresponding to said switching elements for shielding incident light thereon.